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ABSTRACT

This self-instructional unit for supervisors and managers in the British hotel and catering industry is intended to consolidate work covered in a 1-day course. The unit covers the key management functions needed to implement an effective purchasing and supply policy. The document begins with an introduction and advice on how to use the unit. The following topics are covered in the unit: (1) purchasing and supply policy; (2) obtaining quality; (3) ordering the correct quantity; (4) dealing with suppliers; (5) purchasing control; and (6) storage. Each section contains trainee objectives and pencil and paper activities, with suggested answers, designed to help trainees meet those objectives. (CML)

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INCREASING OPPORTUNITIES
for
SUPERVISORS AND MANAGERS

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FOOD & BEVERAGE CONTROL

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OPERATIONAL MANAGEMENT PROGRAMME

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Food & Beverage Management

MODULE

FOOD & BEVERAGE CONTROL

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Food & Beverage Control was first published in 1985 as part of *Food and Beverage Management* — produced under an Open Tech contract with the then Manpower Services Commission, and written by Peter Jones. It was extensively revised in 1988. The text used in *Food & Beverage Control* has been further revised and edited by Roy Hayter. Cartoons are by Ian West.

Peter Critten
Management Development Manager

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HOW TO USE THIS UNIT

The material in *Food & Beverage Control* is presented in a self-instructional format. It will help build on and consolidate the work covered in the one-day HCT course of the same title.

Food & Beverage Control is divided into six sections. At the start of each section is a statement of the objectives you will be able to achieve as a result of working through the material that follows.

From time to time you will be asked to relate information given in the text to your own experience and knowledge. Space is provided below these activities for you to write your answers. Some suggested solutions to the questions are given on the following page.

You will also be referred to four other books:

- *Food Service Operations* by Peter Jones, published by Cassell Educational Ltd, London, 1988, ISBN 0 304 31566 4
- *Foodcraft 1: The Dry Processes*, HCTB/Macmillan *Mastercraft Series*, ISBN 0 333 45786 2
- *Foodcraft 2: The Wet Processes*, HCTB/Macmillan *Mastercraft Series*, ISBN 0 333 45787 0
- *Servicecraft: Food and Beverage Service*, HCTB/Macmillan *Mastercraft Series*, ISBN 0 333 46335 8.

Delegates on the HCT's course will receive a number of assignments relating to *Food & Beverage Control.*

INTRODUCTION

Food & Beverage Control takes you step-by-step through the key management functions needed to implement an effective purchasing and supply policy.

You begin by carrying out a survey of the existing purchasing and supply policy in your own unit. You are then introduced to the various ways of specifying quality and how you can work out the economic order quantity for your operation.

Next you prepare appropriate records for controlling your dealings with suppliers and your stocks.

Finally you review the necessary precautions to ensure your stock is maintained in good condition.

SECTION 1
Purchasing and supply policy

After completing this section you will be able to:

- state the objectives of a purchasing and supply policy
- relate these issues to your workplace requirements.

FOOD & BEVERAGE CONTROL

The manager responsible for the food and beverage function usually has responsibility for the purchase of food and drink commodities, cleaning materials for the food preparation and service areas and small equipment. He or she is also likely to be involved in the selection and purchase of large equipment, although more senior management will usually have to approve expenditure above a certain limit.

There are two stages. The first is selection, that is choosing from various alternatives such as:

- which supplier to use
- what quality will be appropriate
- to buy fresh, frozen, canned or dried products
- the brand.

The second is the purchasing action itself, ordering the goods from the supplier and paying for them.

It is not unusual for certain purchasing and supply functions to be taken out of the direct control of the unit manager. Some independent hotel and catering businesses belong to a marketing and purchasing consortium. Best Western, for example, has negotiated discounts with suppliers on behalf of its members. Franchise contracts such as those covering the operation of Wimpys often specify the supplier of all major items. (See section 3.7 of *Food Service Operations*, pages 53 to 55.)

The larger hotel and restaurant groups, local authorities and health authorities usually have a central purchasing division. Trusthouse Forte has its own supplies company which is in effect a wholesaler. British Telecom catering managers deal with a central department responsible for tendering and testing procedures.

For all hotel and catering operations, whatever their size, there will be similar purchasing and supply objectives.

1. *To ensure an adequate supply* It is essential that stock levels are maintained to prevent the operation running short of items.
2. *To minimise investment cost* Every item of stock is money tied up that could be earning interest or put to some other purpose in the operation. It is just as important to make sure that there is not too much stock as it is to avoid shortages by having too little.
3. *To maintain quality* The quality of the goods must meet the standards which have been established consistently. This means checking deliveries.
4. *To produce the right quality at the least cost* A balance needs to be achieved between quality and price so that once the product has been prepared and served its total production cost is on target.
5. *To maintain a competitive position* The operation should be getting at least as good a deal from its suppliers as its competitors are. If this does not happen the competitors will gain a business advantage.

PURCHASING AND SUPPLY SKILLS

The person responsible for purchasing and supply needs to be able to:

- establish the specific requirements of the operation and from this the quality standard for all goods supplied and the stock levels which should be held
- research the potential sources of supply and the product ranges available
- negotiate the best price for the quality required bearing in mind preparation costs and wastage from trimmings
- take responsibility for the purchase itself, receipt of the goods, storage and issues from stores.

In addition the manager may undertake some or all of the following:

- maintain good relations with suppliers, even those from whom purchases are infrequently made
- keep suppliers up-to-date on the operation's requirements and let them know in advance of developments which will affect range, quality or quantity of items purchased
- dispose of stock that has passed its use-by date, or is no longer required because of a change in policy or business levels
- develop good relations with other operators in the area (even those who are competitors). There may be a time when stock has to be borrowed or bought from them and you may be asked to help them out when they have an emergency.

A simple systems diagram of the food purchasing process developed by the schools meals service in the USA is shown below. It recognises that larger organisations will be more formal in their approach than smaller operators.

PRE-PURCHASE

1. Plan menus
2. Determine quality and quantity needed
3. Determine stock levels
4. Establish order sizes
5. Write purchase specifications

THE PURCHASE **Formal method**	**THE PURCHASE** **Informal method**
6. Develop purchase order	6. Develop purchase order
7. Establish tender schedule	7. Obtain price quotation
8. Issue invitation to tender	8. Select supplier
9. Evaluate tender	9. Place order
10. Award contract	
11. Issue purchase order	

POST-ORDER

12. Receive goods	10.
13. Evaluate and follow-up	11.
14. Issue commodities for use	12.

Draw a systems diagram in the space below for the food purchasing process in your workplace. Indicate the job title of the person responsible for each activity/different stages in the process.

Compare your systems diagram with someone who works in a similar operation. Here is another example, this time from an independent three-star hotel. You will note that the food and beverage manager has delegated certain tasks to the head chef and others to the storekeeper. The food and beverage manager still has overall responsibility.

Food purchasing process at the Highlands Hotel

1. Plan menus	F&B manager/Head chef
2. Determine quality and quantity	Head chef/F&B manager
3. Decide stock levels	Head chef (fresh commodities) Storekeeper (dry goods)
4. Obtain price quotation	Storekeeper
5. Select supplier	F&B manager
6. Place order	Storekeeper/Head chef
7. Receive goods	Storekeeper
8. Issue stock	Storekeeper
9. Evaluate purchasing and supply policy	F&B manager

This section ends here. Take a break before starting Section 2 which looks at quality.

SECTION 2
Obtaining quality

After completing this section you will be able to:

- write a simple purchase specification
- understand the relationship between quality of supplies, the standard of product and service provided to the customer, and the expectations of customers
- identify sources of objective quality standards.

This section is concerned with the procedures and methods that will help ensure quality throughout the purchasing, supply, production and service stages.

A *purchase specification* can be used to describe the operation's detailed requirements for particular commodities. This can be prepared by a senior member of food and beverage management, the head chef or catering manager for example, or by head office specialists. Information from trade associations, government publications and the food trade can often help with the details.

Purchase specifications must take into account a variety of factors such as:

- company policy
- food production system (this is covered in more detail in another self-study unit *Food & Beverage Production*)
- storage facilities
- staffing (numbers and expertise)
- menu requirements (also covered in *Food & Beverage Production*)
- budgets/financial considerations
- service style (covered in more detail in the self-study unit *Food & Beverage Provision*).

Compare these examples of a purchase specification for sirloin/ entrecôte steak and write down below why you think they are so different.

Example one

Argentine/Australian chilled beef
Pre-cut to 200 g weight
Supplied in packs of 25

Example two

1. *Striploin to be prepared from a 3 wing Rib Sirloin.*
2. *Back strap gristle to be removed.*
3. *Side chain to be left on.*
4. *Length of tail not to exceed 25 mm from eye of meat and must not be all fat.*
5. *Surface fat not to exceed 12 mm thickness.*
6. *First cut from the rump end of the striploin not acceptable.*
7. *Steaks to be cut to the required size and must be of uniform thickness.*

Example one is from a freehouse pub with a busy restaurant trade. *Example two* is from a national chain of steak houses exercising very tight control.

As these examples show, purchase specifications can be short, or quite detailed. The information can include:

- name of the product
- intended use of the product
- details on the grade, size, weight, brand name, edible yield and so forth
- procedure for checking quality on delivery
- price range
- minimum and maximum order quality.

Consider the following information on the Meat and Livestock Commission's beef carcase classification service. The service provides a basis for meat traders to describe carcases using common criteria. It is based on the European Community scheme and categorises carcases by weight, sex, conformation and fatness.

***Conformation:** five main classes E (best), U, R, O, P (poorest) according to shape of carcase profiles. Classes U, O and P are divided into upper (+) and lower (-) sub-classes.*

***Fatness:** five main classes 1 (very lean), 2, 3, 4, 5 (very fat) according to fat cover. Classes 4 and 5 are divided into low (L) and high (H) sub-classes.*

The typical beef carcase has a classification of R4L, but increasingly the requirement is for leaner carcases in fat class 3.

On the basis of this information note below the details you would add to the second example of a specification for sirloin steak (on page 11).

You will probably have specified that the beef should be British with a classification of R4L (or if you feel the steak house should take account of healthy eating trends and improve the overall quality, U+3).

The Meat and Livestock Commission also operates a classification scheme for lamb and pork. More details can be obtained from the MLC Meat Promotion Department, PO Box 44, Queensway House, Bletchley, Milton Keynes, Bucks MK2 2EF, telephone (0908) 74941.

Example of a purchase specification

Product	Best end of lamb
Definition	Taken from a crown best end (ribs 6 to 12 inclusive split cleanly down the vertebrae
Grade of meat	R3L (British lamb)
Quality	The meat should be dark red in colour The fat should be white and brittle The skin should be smooth
Weight	Prepared weight 250-500 g
Surface fat	Even covering not more than 5 mm thick
Preparation	Chine bone removed Tip of blade bone removed Maximum length of rib bone 125 mm Bone exposed to 10 mm at end

Where they can specify the quality clearly, purchase specifications are essential tools in the overall quality control programme of the establishment. They will help ensure consistent products for the customers. Other advantages include:

- helping establish more accurate food costing
- giving everyone concerned in the buying and production processes a clear idea of what is expected, including the supplier, storekeeper, chefs, food service staff, management, control clerks
- indicating to potential suppliers who have been invited to tender/quote exactly what is required.

Unless purchase specifications are carefully thought through they can become impossible to put into practice. Here are some of the faults that can occur. Note briefly below each example what problems might occur.

1. *Quality standard specified is very difficult to obtain.*

2. *Unnecessary requirement laid down about origin of items, for example English strawberries.*

3. *Specific and unreasonable delivery time specified.*

4. *Vague or otherwise inadequate specification.*

1. Unrealistic quality standards add to the cost. They may mean it is difficult to obtain the goods at all, and with some products it may be difficult to check the quality anyway.
2. Improved transport and more sophisticated marketing by producer countries has meant that more and more fresh products are available throughout the year, different countries supplying at different times. Even if the produce from the specified country is available there may be less expensive and equally good alternatives.
3. Unreasonable delivery times could add unnecessary costs. While it may be important that lettuces for the day's salads are delivered daily before a certain time so that they can be prepared, it will be less important when the week's dry goods are delivered, providing the storekeeper is on duty.
4. Vague specifications defeat the whole object of having purchase specifications.

WHAT IS QUALITY?

Quality does not necessarily mean the best available. Quality has to match consumer needs. The level or standard of product and service provided to the customers should match as closely as possible what these customers expect and need.

Quality is a somewhat subjective matter. People's opinions vary on what is a 'good meal' or a 'good pint'. It is possible using market research techniques to establish the expectations and preferences of customers, and then to develop a product which matches the demand. Another approach is to devise a product of a certain standard and then to wait for customers in sufficiently large numbers to come and buy it. In practice the successful operators use a mixture of both approaches. Those who do try and sell a product that nobody wants tend to go out of business.

> McDonalds' success in Britain has been put down to the fact that the company realised what an enormous demand existed for a previously unknown product, fast food.
>
> Read case study 11.2 in *Food Service Operations* (pages 164 and 165). Look at unit 1 in *Servicecraft: Food and Beverage Service*.

FOOD QUALITY STANDARDS

Until the mid 1970s food standards were not easily defined in the UK. Eggs were an exception with the lion stamp offering quality assurance to the consumer. Since then European Community legislation has led to the introduction of grading systems for various products and the public has generally become more conscious of quality. As a result some of the large producers have introduced their own grading systems, organisations such as Food from Britain and the Milk Marketing Board have developed special schemes, and countries exporting products to the UK have come up with their own versions.

The situation is complex, and if purchase specifications are to deal with quality adequately there is no alternative but to study the literature produced by such organisations as the British Food Information Service, Market Towers, New Covent Garden Market, London SW8 5NQ (telephone 01-720 7551) and to consult the standard references such as *Food Commodities* by Bernard Davis, published by Heinemann, London.

In addition to specifying grades (or as an alternative) purchase specifications can include general quality points. For vegetables and fruit, for example, these might include:

- they should be clean (although with freshly picked local farm produce or organically grown items, the presence of a little soil is acceptable)
- the item should have a good colour, size and shape and a fresh appearance with no sign of wilting or ageing.

See *Foodcraft 1: The Dry Processes*, page 184.

Consider what should be covered in a purchase specification for either of the following items and write down below the details you would want covered:

Option one

Product	*Potatoes for general use (boiling, roasting, steaming, baking, shallow frying)*
Variety	
Weight	
Preparation	
Price range	
Quality points	
Delivery	

Option two

Product	*Table wine (to be sold as house wine)*
Country of origin	
Package	
Quality	
Price range	
Order quantity	

Option one

Product	*Potatoes for general use.*
Variety	Early crops: Pentland Javelin, Wilja and Ulster Sceptre might be on your list as they are good all-rounders. Main crops: Maris Piper, Désirée and Pentland Squire are good all-rounders.
Weight	Probably 56 lb or 28 lb (if prepared).
Preparation	You may have specified prepared whole for roasting and boiling potatoes, for example, selected and washed for baking (when a weight per potato would be stated).
Price range	You may have consulted market price guides such as the list published each week in the *Caterer and Hotelkeeper*.
Quality points	You are likely to have covered the following: — of good shape — free from dirt, disease, mechanical damage — no green patches — no growth shoots.
Delivery	A delivery time might be stated if potatoes had to be delivered daily.

Option two

Product	Table wine.
Country of origin	You may have specified particular countries, EC countries or left this wide open.
Package	If you were selling by the bottle then the quantity would be 75 cc to conform to EC legislation, but if you were selling by the carafe and/or glass then you may have specified 1 litre bottle, 3 litre box etc.
Quality	If you were including in your choice wines from the following countries you are likely to have specified the relevant category for table wine: **France** ***Vin de table*** (ordinary table wine in the cheapest price range) ***Vin de pays*** (lowest official category recognised, made from certain grapes grown within a defined area) **Germany** ***Deutscher Tafelwein*** (cheaper wine made from wine regions designated for table wine) ***Tafelwein*** (made from a blend of wines from EC countries) ***Landwein*** (sound quality wine from a designated area) **Italy** ***Vino da tavola*** (ordinary table wine, unclassified) ***Vino tipico/Vino da tavola con indicazione geografica*** (good quality wine from an approved area) **Spain** ***Vino de mesa*** (ordinary table wine) ***Denominación de origen*** (DO) (specifies region where wine was produced) **Portugal** ***Vinho de mesa*** (ordinary table wine from no particular region) ***Vinho de mesa regional*** (table wine from a specified region)
Price range	This would depend on what you felt your customers were prepared to pay and your mark-up
Order quantity	For bottles in cases of 12

This section ends here. Take a break before starting Section 3 which looks at how to order the right amount of each item.

SECTION 3
Ordering the correct quantity

After completing this section you will be able to:

- establish minimum stock levels
- explain what is meant by the term 'delivery cycle'
- calculate the economic order quantity
- recognise the value of economic order quantity calculations to the caterer.

Once the quality of the purchase items is established the next step is to decide the quantity to be bought. In the hotel and catering industry the maintenance of correct stock levels of food, beverages and cleaning materials (sometimes called 'inventory management') ranges from rule-of-thumb or guesswork to sophisticated computer-based models of inventory control. For the manager of a small hotel or guesthouse common sense will probably be the most appropriate method, while the catering officer of a local education authority spending millions of pounds a year will benefit from the most advanced systems available.

Whatever the size and sophistication of the food and beverage function the objective will be the same: to carry enough stock to avoid running out, but not so much that there is a risk of wastage or an unnecessary drain on financial resources. So the essence of a good purchasing policy is the *right amount at the right time*. This means:

1. Taking account of the supplier's ordering procedures and delivery schedules. This may mean telephoning through orders before midday for delivery the following day, or ensuring that written orders are received in the third week of the month for delivery at the beginning of the following month.
2. Establishing the required stock level for each item. This stock level should ensure that the item does not run out between one delivery and the next. For perishable items, for example, deliveries may have to be made daily, while for such items as paper tablecloths monthly or three-monthly deliveries may be adequate.
3. Making sure you know what stock is in hand so that you can bring the stock up to its correct level. The established minimum or par stock level must take account of delivery time and include an allowance for emergencies or safety stock.

If you are not involved in purchasing every day ensuring you have the right stock at the right time becomes routine and quite simple. But if you have not gained this level of experience it can be rather worrying.

The figures given below show the sale of sirloin steaks during a typical four week period. Orders are placed on Monday and Thursday mornings each week for delivery the next morning. Work out and note below what you think the stock level should be.

Week	Sun	Mon	Tues	Wed	Thurs	Fri	Sat
1.	35	21	26	21	23	42	43
2.	39	19	21	17	19	44	44
3.	36	23	20	19	22	38	40
4.	31	21	25	23	22	37	41

To establish the required stock level it is fairly obvious that you have to use the daily sales figures — but how? You might have tried one of the following ways.

1. Calculating the average daily sale of steaks by adding up all the figures and dividing by the number of days. This gives an average of 29 to multiply by 4 (the maximum time between one delivery and the next) to arrive at the stock level of 116.
2. Working out the highest level of sales between one delivery and the next. This is from Friday of week 2 to Monday of week 3, when 147 steaks were sold.
3. Selecting the highest number of steaks sold on any one day and multiplying by 4 (the greatest number of days between deliveries). 44 steaks are the most sold on any one day, so the stock level would be 176.

There is a big difference between each of these answers. So look again at the three stock levels, the daily sales and the delivery schedule. Note below how you think each would work in practice.

1.

2.

3.

If there are 37 steaks in stock on a Monday morning, how many should be ordered for delivery the next day? Use the stock level you now feel is the correct one.

1. A stock level of 116 would not be sufficient for the typical level of business on Friday, Saturday, Sunday and Monday.
2. This calculation overlooks the fact that the order is placed on the morning before delivery. The stock order would have to take into account sales between the time of placing the order and the delivery (Thursday's sales of 19 steaks in this example).
3. A stock level of 176 would deal with the sales over even the busiest period.

The steaks in stock should be deducted from the stock level. In this case 140 steaks would be ordered (176 - 37 = 139 and this is likely to be rounded up to 140).

A more sophisticated approach to ordering is based on the concept of *economic order quantity* (EOQ). It is particularly relevant to centralised, group purchasing operations making large purchases. It takes into account two costs that are overlooked in the system just described.

1. *Order cost* Every time an order is placed certain costs are incurred, for example telephone charges, employment costs of the staff involved and costs in preparing any paperwork. Although it is difficult to establish precisely what these costs amount to, it will usually follow that fewer orders mean lower costs.
2. *Storage costs* This covers the costs of the space involved (renting or constructing it), costs of operating chilling equipment, insurance costs and so forth. It also takes into account what the money tied up in stocks might earn if it were put on deposit in a bank. For example if the typical stock value of an establishment was £1000 and the rate of interest offered by banks was 10%, this money could earn £100 a year without any effort at all. However at times of high inflation buying stock now may save substantial sums later (providing it does not spoil in the mean time) and fine wines may appreciate in value and offer a more attractive investment than a bank.

Complete the calculations in the table below to see for yourself how an economic order quantity can be established. 600 units of the example commodity are used over the year. The pattern of usage is regular. Each unit costs £2 and every time an order is placed an order cost of £2.90 is incurred. The storage cost is 12% of the average stock value.

A Number of orders per year	B Quantity ordered/ Order size	C Order cost per year	D Average stock value (Bx50%x£2)	E Storage cost per year (Dx12%)	F Total cost (C+E)
		£	£	£	£
1	600	2.90	600	72.00	74.90
2	300	5.80	300	36.00	
3	200	8.70			
4	150				
5	120				
6	100				

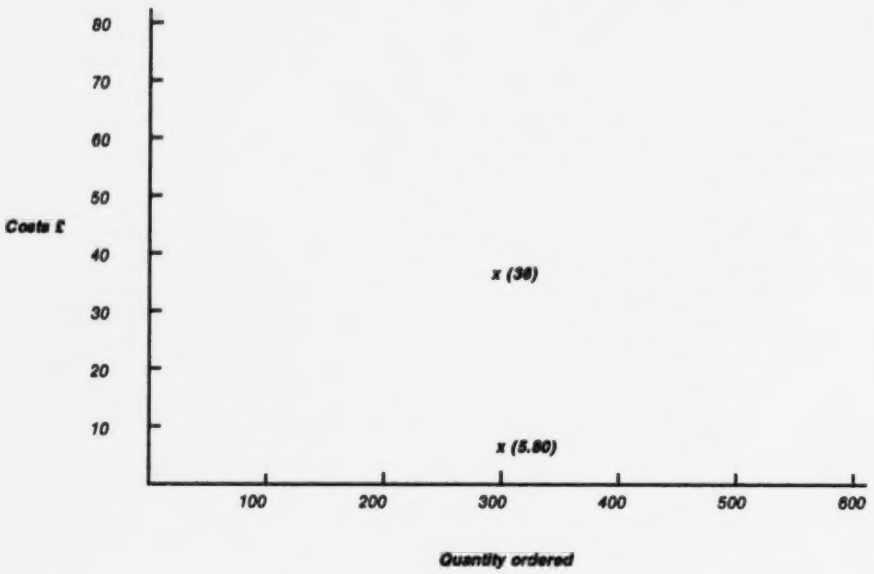
The completed table shows that the total cost drops as the order quantity is reduced and the frequency of orders is increased — until the order costs become so high that the total costs begin to increase again. This happens when six orders or more are placed per year, so the economic order quantity would be 120 units. At this point you will note that order costs and storage costs are about the same.

A *Number of orders per year*	*B* *Quantity ordered/ Order size*	*C* *Order cost per year* £	*D* *Average stock value (Bx50%x£2)* £	*E* *Storage cost per year (Dx12%)* £	*F* *Total cost (C+E)* £
1	*600*	*2.90*	*600*	*72.00*	*74.90*
2	*300*	*5.80*	*300*	*36.00*	*41.80*
3	*200*	*8.70*	*200*	*24.00*	*32.70*
4	*150*	*11.60*	*150*	*18.00*	*29.60*
5	*120*	*14.50*	*120*	*14.40*	*28.90*
6	*100*	*17.40*	*100*	*12.00*	*29.40*

From the figures above plot on the graph below the relationship between:

- *order cost and quantity ordered*
- *storage cost and quantity ordered.*

For example for an order quantity of 300 the order cost is £5.80 and the storage cost is £36.00 — these two points have already been marked for you.



Your graph should show a straight line for storage costs and a curved line for order costs. As you will realise this is because there will be zero storage costs if no order at all is placed, and storage costs in this example increase directly in proportion to the order size.

On the other hand order costs have more to do with the frequency of orders than the quantity ordered and there will always be some cost incurred.

The point at which the two cost lines cross is the optimal order size — fortunately there is a formula to work it out so it is not necessary to plot a graph for every commodity. The formula is:

$$\text{Economic order quantity (in units)} = \sqrt{\frac{2 \times \text{order cost per order} \times \text{number of units used per year}}{\text{storage costs, per year, per unit}}}$$

So in order to work out the economic order quantity you need to know:

- order cost per order — this will vary depending on the size and complexity of the order but most large catering establishments can group the commodities they order and estimate the costs associated with the daily meat order, for example, by taking into account telephone charges, the time of the person making the call, time involved subsequently in checking the delivery, handling the paperwork
- number of units used per year — this is relatively easy to establish from stock taking figures
- storage costs, per year, per unit — this will depend on how much space the unit takes up and on any costs involved in keeping it refrigerated or frozen. It is generally accepted that annual storage costs are 12% of the actual value of dry goods and around 18% for items which have to be kept frozen. These figures will be higher in city centres, for example, where property costs are very high.

Use flour as an example. If:

flour is purchased in units of	28 lb bags
number of bags used per year	200
order cost per order	£1.50
cost per bag	£8.00
storage cost per bag	£0.96 (12% of £8.00)

and the formula for working out the economic order quantity:

$$EOQ = \sqrt{\frac{2 \times £1.50 \times 200}{£0.96}} = 25 \text{ bags}$$

Work out the economic order quantity for the following example:

frozen peas are purchased in units of	*3 kg*
number of bags used per year	*936*
order cost per order	*£2.00*
cost per bag	*£6.50*
storage cost per bag	*£1.17 (18% of £6.50)*

$$EOQ = \sqrt{\frac{2 \times £2.00 \times 936}{£1.17}} = 57 \text{ bags}$$

If you did not get the right answer it is probably because you carried out the calculation in the wrong sequence. First multiply the top line, then divide this by the bottom line, then take the square root.

Remind yourself of how the total cost looks if you order rather more or rather less than the economic order quantity. The calculation is similar to that you did on page 24. You work out the number of orders that will have to be made each year and from this the total order cost:

$$\text{Order cost per year} = \frac{\text{Number of unit used per year} \times \text{Order cost per order}}{\text{Order size}}$$

You then work out the total storage costs:

$$\text{Storage cost per year} = \frac{\text{Annual storage cost per unit} \times \text{Order size}}{2}$$

The total cost per year is the sum of the order and storage costs per year.

Complete the following table using these formulas and the examples of flour and peas.

B Quantity ordered/ Order size	C Order cost per year £	E Storage cost per year £	F Total cost C+E £
Flour			
25	*12.00*	*12.00*	*24.00*
20	*15.00*	*9.60*	
40			
Peas			
57	*32.84*	*33.34*	*66.18*
60	*31.20*	*35.10*	*66.30*
40			
70			

	B Quantity ordered/ Order size	C Order cost per year £	E Storage cost per year £	F Total cost C+E £
Flour				
	25	12.00	12.00	24.00
	20	15.00	9.60	24.60
	40	7.50	19.20	26.70
Peas				
	57	32.84	33.34	66.18
	60	31.20	35.10	66.30
	40	46.80	23.40	70.20
	70	26.74	40.95	67.69

Even though many small operators will not use the economic order quantity formula, they will recognise that their ordering procedure should be organised in the most cost-effective way.

Economic order quantities cannot be applied to certain commodities. Write down below what you think they are.

Fresh produce such as fruit, vegetables, milk, cream, yogurt, bread and eggs need to be delivered frequently, irrespective of the added cost.

Take a break before starting Section 4 which considers how to manage suppliers.

SECTION 4
Dealing with suppliers

"I'm gonna make you an offer you can't refuse"

After completing this section you will be able to:

- identify and use different sources of supply
- evaluate special offers and other opportunities to reduce the purchase price.

Caterers sometimes purchase from the primary source, for example:

- fresh vegetables from a local grower
- biscuits direct from the manufacturer
- milk and cream from the local dairy (which has processed the milk it has bought from farmers).

It is more usual for caterers to deal with secondary sources such as wholesalers. The advantages are that wholesalers:

- offer a wider range of goods and brands than the primary source
- are usually located nearer to the catering operation
- will be willing to supply goods in small or large quantities as required
- are likely to provide a delivery service.

With some products there are only one or two 'intermediaries' between the original source and the caterer, milk for example. With others such as New Zealand lamb there are rather more. For each of the following products note below who you think has handled them before they get to the caterer.

Eggs

Scotch whisky

Dessert apples

Cheese

Your answer will depend on the size of catering operation you have in mind, but the chain may look something like this:

Eggs
Battery farm — Wholesaler — Caterer

Whisky
Distillery — Wholesaler — Caterer

Apples
Grower — Market wholesaler — Wholesaler — Caterer

Cheese
Farmer — Dairy — Manufacturer — Wholesaler — Caterer

Caterers can purchase commodities by various methods depending on the nature of the commodity, the amount being purchased and the procedures, if any, determined by head office.

Contract purchasing

A contract is a legal agreement, in this case between the supplier and the caterer, under which the supplier agrees to supply a particular item or items for a certain period of time usually at an agreed price. The contract will usually cover delivery arrangements, quality, quantity (there may be minimum order quantities), what if any alternatives can be substituted, what happens if the caterer is unsatisfied with the quality, invoicing and payment arrangements. Such contracts give the caterer stability, particularly when prices are covered by the agreement.

Nominated supplier

This means that particular commodities must be ordered through a certain supplier, for example all dry goods from ABC Company. This method is used by large organisations and companies with subsidiary catering units where the managers are in charge of their own ordering. So the catering officer at a school for example will order all the meat from a particular company. The advantage is that head office can negotiate substantial discounts, determine the quality which will be supplied and insist on good service.

Tendering

This is used by the larger organisations. Suppliers are asked to submit quotations and the caterer can consider who offers the best value, reliability and service.

Cash and carry

Many small caterers buy supplies from a cash and carry. They can choose from the range available, buying in precisely the quantity they need at the time they need it.

The market

Fresh vegetables and fruit and sometimes meat and fish are bought from the local market by some caterers.

Suppliers recognise that caterers are price conscious and where possible will shop around for better deals. This will be particularly important where the caterer is operating in a price sensitive market, to tight budgets and low margins.

In some cases the caterer may accept slightly higher prices in return for consistently good quality, convenience and reliability. If the supplier offers favourable credit terms, or does not press for rapid payment this too can be important. Other caterers may be able to negotiate a discount for prompt payment.

The caterer can sometimes take advantage of special offers or bargains, for example an introductory offer on a new product, a special deal to promote the product, a clearance sale, a price-cutting campaign for a new supplier keen to undercut the competitors, a drop in prices because of an over-supply of the product. As with any bargain, the caterer must be aware of the pitfalls that await the unwary. It would be unwise for a new restaurant to buy all its glassware from a sale if the range selected was discontinued.

Opportunity buys can increase storage costs to such an extent that the price advantage is lost.

A caterer orders 6 cases of vermouth every month at £120 per case. A special offer has been made on orders of 12 cases: the 12th case would be free.

To take advantage of this the caterer would have to order two months' supply.

12 cases would usually cost £1440 (12 x £120).

The special offer is 12 cases for £1320 (11 x £120).

The saving would therefore be £120, but to pay for the special offer the caterer has to spend £600 more than normal (£1320 - £720), money which might have been earning interest in the bank or might have to be borrowed from the bank.

To assess the advantage of the offer the caterer needs to consider what sort of return he is getting on the £600 that would not otherwise have been spent and express this as a percentage so that it can be compared with interest rates:

$$\frac{\text{Amount saved}}{\text{Amount invested}} \times 100 = \% \text{ return on investment}$$

$$\frac{120}{600} \times 100 = 20\%$$

This is a satisfactory return, but the caterer should also consider what may happen to the price of the vermouth in the next two months. If it goes up then the saving is more substantial, but if it drops the special offer may not be worthwhile. Also if the caterer's sales pattern suddenly changed and vermouths dropped in popularity the extra stock may take a long time to be sold.

A caterer normally buys 72 packets of peeled prawns per month at £9.00 per packet. The supplier is offering a 10% discount on purchases of 144 packets. Work out below what return on investment this would offer the caterer.

The caterer would normally spend £648 per month.

The special offer price would be £1166.40 (144 x £9.00 = £1296 less 10%).

The saving would be £129.60 (£1296 - £1166.40), but the caterer would need to spend £518.40 more than usual (£1166.40 - £648.00).

The return on investment is:

$$\frac{129.60}{518.40} \times 100 = 25\%$$

This is a satisfactory return but the caterer would have to consider whether twice the usual quantity of prawns can be stored in proper conditions and whether the quality of the prawns will be affected by the longer storage period (up to two months). There would be no saving at all if 16 or more packets of prawns had to be discarded through mis-storage:

$$\frac{\text{Saving}}{\text{Special offer price}} = \frac{£129.60}{£8.10} = 16$$

As this has been a short section you may wish to proceed directly to Section 5 which considers control systems.

SECTION 5
Purchasing control

After completing this section you will be able to:

- state the correct procedure for dealing with supplier's documentation
- explain how to take stock and work out the stock value.

FOOD & BEVERAGE CONTROL

In small establishments the chef may be responsible for the control of foodstuffs from the time they arrive on the premises to the time they are issued to and used in the kitchen. The bar manager may exercise a similar responsibility for alcoholic beverages. In larger units other people will be involved such as the storekeeper, the control clerk and perhaps the purchasing officer.

When the order is placed it can be done by:

- telephone
- in person to a sales representative
- by post or fax.

A record should be kept of the order, preferably in an *order book*. This may be in triplicate, when:

- the top copy would be sent to the supplier (as confirmation in the case of telephone orders)
- the second copy is sent to the control office or accounts department for checking against the invoice
- the third copy is kept by the person making the order as a record of what has been ordered.

Some suppliers, particularly if it is a large order, will send an *advice note* in advance of the delivery. This serves as an acknowledgement of the order, often indicates when and how the order will be delivered, and will show any items which are unavailable for some reason.

When the goods are delivered they should be accompanied by a *delivery note*. The person receiving the delivery should check what arrives with what was ordered. The delivery must also be checked against the delivery note to ensure that it is a true record of what has been accepted.

A *goods return note* should be written out by the delivery person to detail any goods which were unwanted, and to cover any other discrepancies with the delivery note.

Compare the following delivery note with what was ordered. Make a note on the order or delivery note of any differences. You may also spot some deliberate errors!

From: BLAKES RESTAURANT ORDER
47 HIGH STREET
ALCHRISTON

Serial No: 339/01
Ref: JR
Date: 1-3-1990

Quantity	Unit	Item
10	Kg	SUGAR GRANULATED
1	CASE	PEARS – SELECTED (A2)
1	Kg	BISCUITS – CHEESE
1	Kg	BISCUITS – SWEET
1	BOX	COFFEE - KENCO
1	½GALL	GHERKINS
1	CASE	MILK POWDER – MILAC
12	PKT	MATCHES

Ordered by J Roberts

Authorised by R Wilson

DELIVERY NOTE

Arthur & Merlin
King Edwards Parade
Brighton

Deliver to: Blakes Restaurant
47 High Street
Alchriston

Delivery Note No: WO66375
Order Date: 1/3/90
Supply Date: 4/4/90
Account No: B19841

Special Instructions: **Load:** 182 **Drop:** 110

Quantity	Unit	Description	Product Code
5	2 kg	Granulated sugar	864114
1	case	48 x A2 select pears	863289
1	case	6 x 1 kg cheese biscuits	861894
1	box	1 kg Family Circle biscuits	861837
1	box	36 x 4 oz Kenco coffee	861431
1	case	12 x 3 oz pickled gherkins	862841
1	case	6 x 2 kg Milac milk	863718
1	box	6 x 4 kg caster sugar	864189
1	pack	12 x 12 Ship matches	104208

Customer's signature J Roberts

The differences you may have noticed are:

- Caster sugar is supplied that has not been ordered. This would be returned.
- Six 1 kg boxes of cheese biscuits have been delivered instead of just one. The storekeeper would probably send back the five unordered boxes.
- 12 3 oz jars of gherkins have been delivered instead of one large jar. Depending on cost and the current availability of this product the storekeeper may or may not accept this and adjust his original order accordingly. In this case let us assume he accepts it.
- The packs of matches are different to those specified, but the storekeeper accepts them.

Complete the goods return note below to cover the items that the storekeeper is returning.

GOODS RETURN NOTE

Arthur & Merlin
King Edwards Parade
Brighton

Customer: BLAKES RESTAURANT
47 HIGH STREET
ALCHRISTON

Date: 4-3-90
Delivery Note No: W066375

Quantity	Unit	Description	Product Code

Customer's signature .....

When the storekeeper or whoever accepts the delivery is satisfied with what has been supplied, he or she will sign the delivery note and keep one copy as a record. If empty kegs, casks, bottles or gas containers are being returned then these would be noted on the appropriate document.

In due course the supplier will send an invoice asking for payment. Some suppliers reduce paperwork and overhead costs by combining the delivery note with the invoice and leaving it with the purchaser at the time of delivery.

Take a look at the Blakes Restaurant invoice and note below what is wrong.

INVOICE

Arthur & Merlin
King Edwards Parade
Brighton

Invoice to: Blakes Restaurant
47 High Street
Alchriston

Date: 15/3/90
Invoice No: 19837H
Order date: 1/3/90
Delivery: 4/3/90
Customer Account No: B19841

Qty	Unit	Description	Code	Unit	Total	VAT
5	2 kg	Granulated sugar	864114	1.43	7.13	0.00
1	case	48 x A2 select pears	863289	24.16	24.16	0.00
6	1 kg	Cheese biscuits	861894	2.24	2.24	0.00
1	box	1 kg Family Circle biscuits	861837	2.20	2.20	0.00
36	4 oz	Kenco coffee	861431	0.70	25.20	0.00
1	jar	Half gal. pickled gherkins	862845	3.42	3.42	0.00
1	case	6 x 2kg Milac milk	863718	21.39	21.39	0.00
6	4 kg	caster sugar	864189	3.28	19.68	0.00
1	pack	12 x 12 Ship matches	104208	32.08	32.08	2.40
				TOTAL	137.70	
				VAT	2.40	
VAT Reg. No. 222/364004				**AMOUNT DUE**	140.30	

The invoice charges Blakes Restaurant for the caster sugar and cheese biscuits even though they were returned. In this situation the supplier would send a ***credit note***.

CREDIT NOTE

Arthur & Merlin
King Edwards Parade
Brighton

To: Blakes Restaurant
47 High Street
Alchriston

Date: 20/3/90
Load: 182
Drop: 110

Credit Note No: 6532H
Account No: B19841

Invoice No.		Total	VAT
19837H	1 box caster sugar	19.68	0.00
19837H	5 x 1 kg cheese biscuits	11.20	0.00
	TOTAL	21.88	0.00
	VAT	0.00	
	CREDIT DUE	21.88	

Credit notes must be checked against goods return notes/delivery notes and the invoice to see that they agree on all the details.

The caterer will pay the supplier on receipt of the invoice or once a month when the supplier has sent the *statement of account*.

Statements of account must be checked carefully against the previous documents. Check the following statement with the invoice, goods return note and credit note for Blakes Restaurant. Calculate what Blakes Restaurant actually owes Arthur and Merlin. Remember that there are deliberate errors in some of the earlier example documents.

STATEMENT

Arthur & Merlin
King Edwards Parade
Brighton

Account Name: Blakes Restaurant
47 High Street
Alchriston

VAT Reg. No. 222/364004

Date: 31/3/90

Customer Account: B19841

Date	Reference	Code	Debit	Credit	Balance
					101.90
02/3/90	Cheque	C		101.90	00.00
07/3/90	18500H	G	483.62		483.62
11/3/90	19260H	G	221.00		704.62
15/3/90	19837H	G	140.30		844.92
20/3/90	6532H	E		19.68	825.24

There are two items on the statement that can be checked against previous documents: the invoice of 15/3/90 and the credit note of 20/3/90. The total does correspond for the invoice, but not for the credit note. However there are also errors in the original invoice and credit note:

- Total price of the granulated sugar should be £7.15 (5 x £1.43), not £7.13.
- The unit price of cheese biscuits is £2.24, therefore it should be £13.44 for six packets.
- The item of gherkins is a charge for what was originally ordered and not for what was delivered. One case of gherkins costs £3.60.
- VAT on the matches is incorrectly calculated, 15% of £32.05 is £4.81.
- The sub total of the invoice should be £137.50 (not £137.70).
- The credit note itemises the returns correctly but there is an error in addition so that the total credit amount should be £30.88.

The invoice total should be £153.71 and the credit note £30.88. So the amount Blakes Restaurant owes to the supplier is £827.45 (assuming the other entries are correct!)

Catering establishments maintain their own records of stock movements, in some cases on a computer. The *goods received record* provides a means of identifying when particular items were delivered. This is particularly useful for the person in charge of the stock when the supplier's documents (delivery notes, invoices, credit notes and goods return notes) are passed on to the accounts or control office. The goods received record usually includes reference details of related documents (the order number and delivery note number) and cost details are added once the invoice has been received.

Complete the following entry in the goods received book for the delivery at Blakes Restaurant from Arthur Merlin on 4/3/90. Don't forget to take into account the goods return note. The unit and actual cost is added from the invoice (take care to use the correct figures).

Date	Supplier	Order No.	Delivery Note No.	Item	Unit Cost	Actual Cost
4.3.90	A+MERLIN	839/01	W044375	5x2 Kg SUGAR-GRANULATED	1.43	7.15

Bin cards provide an instant record of the stock situation for every item. Every time items are received or issued the bin card is updated to show the new stock. Originally bin cards were kept with the 'bin' or other container, by the shelf or rack. Nowadays bin cards tend to be kept separately, in an index box, in a loose leaf folder or on a computer.

The bin card usually indicates the minimum and maximum stock levels and the re-order quantity.

Use the information you have transferred to the goods received book to up-date the four bin cards below.

Product: GRANULATED SUGAR 2Kg
Supplier: ARTHUR & MERLIN
Bin No.: 83
Max.: 15
Min.: 10
Re-order: 5

Date	Ref.	Rec'd.	Issue	Bal.
28/2	Bal. b/f			13

Product: SELECT PEARS A2
Supplier: ARTHUR & MERLIN
Bin No.: 61
Max.: 72
Min.: 24
Re-order: 48

Date	Ref.	Rec'd.	Issue	Bal.
28/2	Bal. B/F			22

Product: CHEESE BISCUITS 1 Kg
Supplier: ARTHUR & MERLIN
Bin No.: 72
Max.: 3
Min.: 2
Re-order: 1

Date	Ref.	Rec'd.	Issue	Bal.
28/2	Bal. b/f			3

Product: KENCO COFFEE
Supplier: ARTHUR & MERLIN
Bin No.: 17
Max.: 56
Min.: 20
Re-order: 36

Date	Ref.	Rec'd.	Issue	Bal.
28/2	Bal. b/f			25

Usually on a daily basis and at a specified time of the day, goods will be issued from the stores to the kitchen, restaurant, bars and other departments. To order goods from the stores a *requisition* is completed and signed by an authorised person such as the head chef or restaurant manager. Generally three copies of the requisition are made: one copy for the department ordering the goods, one copy for the accounts or control office and one for the stores. If for some reason not all the items requested can be supplied then all copies of the requisition must be amended. The person receiving the requisitioned goods signs on the store and/or control office copies that they have been accepted.

Use the following example of a requisition to update the four bin cards opposite.

STORES REQUISITION

Date: 5-3-90 *No:* 210

From: Jane Thomas, Staff Restaurant

Number required	*Description*
3	A2 Select Pears
6	4oz Kenco coffee

Authorised signature: Joy Adams. *Goods received by:* J Thomas

Date: 5-3-90

This is how your bin cards should now look.

Product: GRANULATED SUGAR 2 Kg
Supplier: ARTHUR & MERLIN
Bin No.: 83
Max.: 15
Min.: 10
Re-order: 5

Date	Ref.	Rec'd.	Issue	Bal.
28/2	Bal. b/f			13
4/3	WO66375	5		18

Product: SELECT PEARS A2
Supplier: ARTHUR & MERLIN
Bin No.: 61
Max.: 72
Min.: 24
Re-order: 48

Date	Ref.	Rec'd.	Issue	Bal.
28/2	Bal. b/f			22
4/3	WO66375	48		70
5/3	210		3	67

Product: CHEESE BISCUITS 1 Kg
Supplier: ARTHUR & MERLIN
Bin No.: 72
Max.: 8
Min.: 2
Re-order: 1

Date	Ref.	Rec'd.	Issue	Bal.
28/2	Bal. b/f			3
4/3	WO66375	1		4

Product: KENCO COFFEE
Supplier: ARTHUR & MERLIN
Bin No.: 17
Max.: 56
Min.: 20
Re-order: 36

Date	Ref.	Rec'd.	Issue	Bal.
28/2	Bal. b/f			25
4/3	WO66375	36		61
5/3	210		6	55

No documentation system is foolproof, so checks have to be made to ensure that control is effective. This involves taking stock.

The second reason for taking stock is to help calculate the cost of the items used in a particular period. An analysis of the invoices will give the value of the items received over the period but unless the operation is starting from scratch there will be a stock at the start of the period. There will also be some stock left at the end of the period. These opening and closing stocks have to be valued so that an accurate figure can be obtained for the cost of goods used.

The manager of Blakes Restaurant has calculated that:

- *on 1 February the value of stock in the storeroom, kitchen and restaurant was £1200*
- *purchases during the month came to £3000*
- *the value of the stock on the last day of the month was £1600.*

Work out below what was the cost of materials used during February.

You have probably worked out the cost of materials used in the following way:

	£
Opening stock (1 February)	1200
Add Purchases during the month	3000
	4200
Less Closing stock (28 February)	1600
	2600

Taking stock is a time consuming task. It involves physically counting and if necessary weighing every item of stock. Even an experianced stocktaker can take two to three hours to count the stock in a bar.

In the stores and cellar it may be possible to keep the different items in particular places. Stock sheets can then be preprinted with the items arranged in the same order as the stocktaker will come across them on the shelves and so forth. It is best when stocktaking in refrigerators, freezers and similar areas to work systematically around the area, writing down the name and quantity of each item as it is found. In some cases stocks of the same item may be kept in several places, for example some kitchens have small refrigerators under the preparation counters where stocks for the lunch or evening session are kept.

The value of the stocks are worked out on the unit values recorded in the goods received record or from invoices. When the price of the item has increased or decreased during the operating period, the closing stock is likely to contain some items bought at one price and other items bought at a different price.

Most caterers use the most recent price. This gives stocks a higher value and so produces a better profit. Another system is to take the average price over the period which has a less upsetting effect on the stock valuation and profit. There are other systems favoured by companies that carry substantial stocks.

Take a break before starting on the final section which deals with the safe and hygienic storage of stocks.

SECTION 6
Storage

After completing this section you will be able to:

- state the objectives of an effective storage policy
- identify how to achieve these objectives.

All the care and attention paid to purchasing will be lost if the goods are stored in unsuitable conditions and become unusable, or get stolen.

Stock can get spoiled if it is kept at the wrong temperature and/or humidity, if it is incorrectly packaged and so becomes contaminated with bacteria or attacked by pests or spoiled by contact with the air, and if it is kept in storage for too long. Stock should always be rotated so that the oldest stock is used first (fine wines and ports may be an exception).

In some catering establishments losses due to staff eating or drinking on duty become a significant problem. If the premises are not secure, thieves can easily gain access and remove valuable items. Poor control systems may mean that some of the goods paid for never actually enter the premises. It is not unheard of for members of staff and trades-people to have a mutually beneficial arrangement, the staff member signs for 12 cases of wine for example when only 11 are delivered. The 12th case is sold by the delivery person and the proceeds split.

To keep stock in good condition and secure:

Storage space should be adequate. Storage space often suffers because planners and developers give most of their attention to the front of house areas which are seen by customers. In general terms storage space for a restaurant should be about ½ sq m (5 sq ft) per cover, and for a hotel about 1.4 sq m (15 sq ft) per bedroom. Fast food operators generally have a very small storage area for the volume of trade, delivery is frequent and the turnover of goods high.

The stores should be well located. Ideally the stores should be on the same level as the delivery area and the food production area.

Storage areas should be properly maintained. Refrigerators, freezers, cold rooms and cellar chilling equipment must be regularly serviced and any problems dealt with promptly. Dry stores must be well maintained so that insects, rodents, birds and other pests are kept out.

The storage area should be secure. Keys should only be kept by authorised staff and the movement of keys carefully controlled for example by signing keys in and out. Doors and windows should be secure to prevent unauthorised entry. Some establishments use closed circuit television to monitor storage and delivery areas. Employers may include in the terms and conditions of employment for staff the right to search employees when they enter and leave the premises.

Staff with access to storage areas should be carefully chosen and well motivated. In very small establishments it is often the chef or the proprietor who is responsible for receiving, storing and issuing goods. It will be in the person's own interests to control commodities effectively as the success of the operation depends on it. In larger operations regular financial reporting and clear lines of responsibility will encourage staff to be honest and efficient.

Review the storage facilities in your workplace and tick whether you think they are good, adequate or poor in the following respects:

	Good	*Adequate*	*Poor*
Storage space available			
Location/access to delivery/ preparation areas			
Maintenance of equipment and building			
Security			
Staff responsibility/ motivation			

Storage area	Temperature °C	Temperature °F	Type of food stored
dry food stores	10 to 15	50 to 60	flour and other cereals, biscuits, canned fruit and vegetables
	7 to 10	45 to 50	canned/bottled drinks
cellars	11 to 15	52 to 60	cask-conditioned beers (real ale), keg beers and lager (usually kept in special cold rooms), wines
cold stores/rooms	3 to 4	36 to 39	fresh vegetables, milk, cheese, butter, canned and bottled drinks, including beers and lagers, foods being cooled, such as freshly cooked chicken, before being stored in refrigerator
refrigerators	1 to 4	34 to 39	dairy products such as cream, yogurt, soft cheeses, milk, cakes and pastries containing cream and custard, eggs, mayonnaise, cans of pasteurised ham, cooked meats
	1 to 4	30 to 34	fresh meat and poultry
	0 to -2	28 to 32	fresh fish
	-18 to -21	0 to -6	pre-frozen foods, ice cream

Source: *Mastercraft 2: Health, Hygiene and Safety in the Hotel and Catering Industry*, HCTB/Macmillan Education, 1990

DRY STORES

- Storerooms should be organised so that both incoming and outgoing orders can be easily checked, weighed or counted.
- Ventilation should be adequate. Direct sunlight should be avoided but the area should be well lit. Any hot pipes which run through storage areas should be well insulated.
- There should be adequate space between rows of shelves. Ideally access to shelves should be from both sides and shelves should not touch the wall. Adjustable shelves provide flexibility but the bottom shelf should always be at least 20 cm (8 in.) from the floor.
- Storage areas should be designed so that they are easy to keep clean and tidy. Spillages which attract bacteria and pests and can cause accidents should be cleared up immediately.
- Items should be stacked safely so there is no danger of tins rolling off shelves or piles collapsing. Shelves should be strong enough to support the required weight. Heavy items should be stored on the lower shelves to make handling easier.
- Items should be stacked so that stock counting is quick and straightforward — no part-filled boxes, no hidden items, all like-items together.
- All poisonous substances should be stored in clearly labelled containers well away from food areas.
- Flour and other cereals should be stored in bins above ground level to avoid damp and to discourage pests.

COLD ROOMS/REFRIGERATORS/FREEZERS

- The equipment must be effective in maintaining the right temperature despite frequent opening and closing of doors. Alarms should provide a warning if the temperature goes above or below the permitted range.
- Hard surfaces, easily cleaned fixtures, floors, walls and ceilings are essential and should be manufactured from a non-absorbent material.
- Walk-in cold rooms and freezers should have an interior door lock release.
- Raw food, especially meat and poultry, should always be stored away from cooked food, ideally in separate refrigerators or freezers. Raw meats should never be allowed to drip through to food on lower shelves.
- Foods should be protected to keep pests, dust and other foreign substances out and to prevent drying out, cross contamination and absorption of smells.
- Refrigerators should not be overcrowded, nor should food be placed directly in front of the cooling unit as this reduces air circulation.
- Refrigerator and freezer doors should never be left open when they are in use. The equipment should be defrosted regularly.
- Fruit and vegetables should be regularly examined for mould and other spoilage which will spread to fresh food unless disposed of immediately.

CELLAR

- The ideal cellar or storeroom provides separate storage areas to suit each type of drink: a main area for cask conditioned and keg beers, a dark draught-free area for wines or separate wine store and a storeroom for bottled drinks such as beer, spirits and minerals. Some modern cellars also have a temperature-controlled room which keeps lagers and other drinks which need chilling at their correct serving temperature.
- A thermometer should be kept in the cellar to check the temperature. A good position for the thermometer is hanging from the ceiling just above the cask beers, away from draughts and strong lights which may give an incorrect reading.
- The atmosphere should be as dry as possible and free from odours. Many cellars encourage moulds (which spoil the beer) because they are naturally damp. Special care should be taken to keep such cellars well-ventilated.
- Cask conditioned beers (or real ales) are 'live' when they reach the establishment, that is the fermentation process is not yet complete. The casks should be positioned on their sides and wedged firmly as soon as they are delivered.
- Keg beers are stored upright. Bottled beers and minerals are usually kept in their crates. Spirits, fortified wines and liqueurs are usually stored in rows upright on shelves.
- Bottles of wine are normally taken out of their boxes on delivery and stored on their sides on racks to keep the corks moist. Wine bottles with a plastic or metal screw top can be stored upright.
- Carbon dioxide gas cylinders should be kept upright and strapped securely to the cellar wall at all times. They must never be stored near a source of heat or in direct sunlight.

Note below the potential safety hazards in this storage area.

You have probably noted the following:

- ceiling cracked
- wall plaster cracked
- electric light lead hanging dangerously
- wheel missing from bottle skip
- crates dangerously stacked
- cleaning materials not put away
- ladder left down (blocking access from door)
- pipes trailing over ice-maker.

This completes the self-study unit *Food and Beverage Control*. If you have attended the HCT course you should complete the assignment cards and send them to your course tutor.

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